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United States Patent Application No. 10/812,446

Amendments to the Claims:

This listing of the claims replaces all prior versions, and listings, of the claims in this application.

LISTING OF CLAIMS

1. (Currently amended) A wellhead system for stimulating and extracting subterranean hydrocarbons from a low-pressure well, the system comprising:

a plurality of tubular heads ~~independently secured by threaded unions~~, each tubular head supporting a mandrel for suspending a tubular string in the well, each mandrel being secured to the tubular head that supports it by a threaded union, and each mandrel supporting one of said tubular heads or an adapter flange for connecting production equipment to the wellhead system.
2. (Currently amended) The wellhead system as claimed in claim 1 comprising two independent said tubular heads separated by a said mandrel, the mandrel being supported by a first of said independent tubular heads and the mandrel supporting a second of said independent tubular heads.
3. (Original) The wellhead system as claimed in claim 1 wherein each threaded union comprises a nut.
4. (Currently amended) The wellhead system as claimed in claim 3 wherein the nut is one of a ~~wring~~ wing nut, a spanner nut and a hammer union.
5. (Original) The wellhead system as claimed in claim 1 wherein the tubular strings suspended by the mandrels are concentrically disposed within a surface casing suspended by a wellhead, the wellhead being supported by a conductor assembly dug into the earth.



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6. (Currently amended) The wellhead system as claimed in claim 1 comprising:
- a casing mandrel ~~threadedly secured to~~ supported by a wellhead and secured to the wellhead by a threaded union, the wellhead securing and suspending a surface casing, the casing mandrel securing and suspending a production casing;
- a tubing head spool supported by the casing mandrel and threadedly secured to the casing mandrel by a pin thread and a threaded union, ~~the casing mandrel securing and suspending a production casing; and~~
- a tubing hanger ~~threadedly secured to the tubing head spool~~ by a threaded union, the tubing hanger securing and suspending a production tubing.
7. (Currently amended) The wellhead system as claimed in claim 6 further ~~comprising an~~ wherein an adapter flange is threadedly secured to the tubing hanger by a pin thread and a threaded union, the adapter flange having an upper flange for connecting to a flow-control device.
8. (Currently amended) ~~The~~ A low-pressure wellhead system comprising:
- an independent screwed wellhead having independently secured tubular heads for supporting respective mandrels that support respective tubular strings in a well bore; and
- a plurality of threaded unions for ~~threadedly secured~~ securing the respective mandrels ~~supported by~~ to the tubular heads, at least one of the mandrels ~~securing and suspending the tubular strings in the well bore~~ supporting one of the tubular heads, which is secured to that mandrel by a threaded union.
9. (Currently amended) The wellhead system as claimed in claim 8 comprising a first tubular head threadedly secured to a surface casing of the wellhead system

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and a second tubular head, a first mandrel ~~located between~~ supported by the first tubular head and supporting the second tubular head ~~heads head~~ and a second mandrel supported ~~above~~ by the second tubular head.

10. (Currently amended) The wellhead system as claimed in claim 9 wherein:

the first tubular head is a wellhead supported by a conductor assembly, the wellhead that secures ~~securing and suspends~~ suspending a surface casing in the well bore;

the first mandrel is a casing mandrel supported by the wellhead, the casing mandrel that secures ~~securing and suspends~~ suspending a production casing in the well bore;

the second tubular head is a tubing head spool supported by the casing mandrel, the tubing head spool supporting the second mandrel at an upper end of the tubing head spool thereof; and

the second mandrel is a tubing hanger supported by the tubing head spool, the tubing hanger that secures ~~securing and suspends~~ suspending a production tubing in the well bore.

11. Cancelled.

12. (Currently amended) The wellhead system as claimed in claim ~~11~~ 10 wherein the threaded unions are one of a ~~wring~~ wing nut, a spanner nut and a hammer union.

13. (Original) A method of completing a low-pressure well comprising steps of:

securing a first mandrel to a first tubular head using a first threaded union, the first tubular head supporting a first tubular string in the well, and the first mandrel supporting a second tubular string in the well;

securing a second tubular head to the first mandrel using a second threaded union;
and

securing a second mandrel to the second tubular head using a third threaded union, the second mandrel supporting a third tubular string in the well.

14. (Original) The method as claimed in claim 13 further comprising a step of securing an adapter flange to the second mandrel using a fourth threaded union.

15. (Currently amended) ~~The~~A method of completing a low-pressure well after a conductor assembly has been installed in the ground above a subterranean hydrocarbon formation, the method comprising steps of:

landing a wellhead onto the conductor assembly, the wellhead securing and suspending a surface casing in the well;

securing a casing mandrel to the wellhead using a first threaded union, the casing mandrel securing and suspending a production casing in the well;

securing a tubing head spool to the casing mandrel using a second threaded union;
and

securing a tubing hanger to the tubing head spool using a third threaded union, the tubing hanger securing and suspending a production tubing in the well.

16. (Original) The method as claimed in claim 15 further comprising the step of securing an adapter flange to the tubing hanger using a fourth threaded union.

17. (Original) The method as claimed in claim 15 further comprising steps of:

after the step of securing the casing mandrel to the wellhead, securing a frac stack to the casing mandrel using a fourth threaded union, the frac stack having

conduits for conveying proppants and pressurized fluids into the production casing for fracturing the subterranean hydrocarbon formation; and
prior to the step of securing the tubing head spool to the casing mandrel, removing the frac stack from the casing mandrel.

18. (Currently amended) The method as claimed in claim 17 wherein the step of securing the frac stack using the fourth threaded union further comprises the steps of:

securing a frac stack adapter flange to the an underside of the frac stack; and
securing an adapter pin to the casing mandrel, the adapter pin having pin threads for engaging box threads of the frac stack adapter flange.

19. (Currently amended) A method of installing and completing a low-pressure wellhead system for the extraction of hydrocarbons from a subterranean hydrocarbon formation, the method comprising the steps of:

digging away earth above the subterranean hydrocarbon formation to accommodate a conductor;
installing a conductor window on the conductor;
running surface casing until a wellhead is seated above the conductor;
cementing the surface casing in place;
removing the conductor window to expose the wellhead;
mounting a blowout preventer and drilling flange to the wellhead using a first threaded union;
inserting a test plug into the wellhead system to test a pressure-integrity of the wellhead system;

removing the test plug after the testing of the pressure-integrity of the wellhead
system is complete;

installing a wear bushing in the drilling flange;

drilling a bore to accommodate a production casing;

running in the production casing until a casing mandrel connected to a top end of
the production casing is seated in a casing bowl of the wellhead;

cementing in the production casing;

removing the blowout preventer and drilling flange;

securing the casing mandrel to the wellhead using a second threaded union;

securing a tubing head spool to the casing mandrel using a third threaded union;

running in a production tubing until a tubing hanger is seated in the tubing head
spool; and

securing the tubing hanger to the tubing head spool using a fourth threaded union.

20. (Original) The method as claimed in claim 19 further comprising a step of
securing an adapter flange to the tubing hanger using a fifth threaded union.

21. (Currently amended) The method as claimed in claim 20 further comprising a
steps of:

after the step of securing the casing mandrel to the wellhead, securing a frac stack
to the casing mandrel using a fifth threaded union, the frac stack having
conduits for conveying proppants and pressurized fluids into the production
casing for fracturing the subterranean hydrocarbon formation; and

prior to the step of securing the tubing head spool to the casing mandrel, removing
the frac stack from the casing mandrel.

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22. (New) The method as claimed in claim 20 further comprising securing flow control equipment to the adapter flange.
23. (New) The wellhead system as in claim 1, wherein each said tubular string is suspended by a respective said mandrel by a threaded connection between the tubular string and the respective mandrel.
24. (New) A wellhead system for stimulating and extracting subterranean hydrocarbons from a low-pressure well, the system comprising:
 - a conductor assembly installed above a subterranean hydrocarbon formation;
 - a first tubular head supported by the conductor assembly;
 - a first mandrel secured to the first tubular head by a threaded union;
 - a first tubular string suspended in the well by a threaded connection to the first mandrel;
 - a second tubular head supported by the first tubular head;
 - a second mandrel secured to the second mandrel by a threaded union; and
 - a second tubular string suspended in the well by a threaded connection to the second mandrel.
25. (New) The wellhead system as in claim 24, wherein the second tubular head is secured to the first mandrel by a threaded union.